ECM Barista – A closer look

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Overview

A relatively new coffee machine from ECM Manufacture in Germany

The Barista arrives well packed (ECM use heavy grade packaging and Bella Barista also double box the machines). Build quality is good with high quality (industry standard) components. It has a mirror finish stainless steel exterior case and a black painted internal steel frame. The quality is noticeable when lifting the machine as the Barista is a heavy machine at approximately 22Kg.

This type of heat Exchanger (HX) machine, is more complex internally than cheaper non HX machines, but much simpler to operate. There are fewer controls and no need to do anything special (apart from filling the water tank occasionally) to draw steam, hot water or espresso at any time. The Barista automatically maintains the water level in the boiler as required and if run low on water in the tank the Barista switches off the heating element and pump as a safety precaution, **but has no low water alarm**.

The machine is attractive and fits comfortably under standard height kitchen cabinets, comparing favourably with other similar prosumer machines that have a heritage and reputation for looking good. Some enthusiasts buy second hand commercial machines, they are very large, heavy, plumbed into the mains and have 3-6kw heating elements in 5l or larger boilers. The Barista can make the same high quality drinks), without the hassle.

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STAR BUY

The details were correct at the time of writing, but the manufacturer and Bella Barista reserve the right to change the technical specification of the packaging, machines and any accessories supplied with the machine (including quantity and type of accessories supplied)

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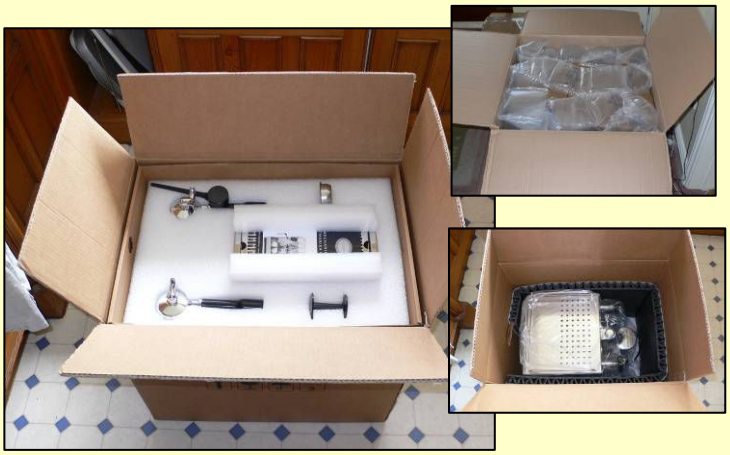
Overview – cont.

The Barista has been described as an entry level prosumer machine with a price that reflects this positioning, but not the quality, which is higher than you would expect. This review will judge the machine not only on function, but on what would be expected for the price

It is a great machine both for the customer to use and the reseller to support and should provide years of reliable service with the minimum of maintenance. Once in position on the counter the machine looks nice and does not dominate on a standard sized work surface. The height of the machine is convenient and gives plenty of room under standard height kitchen cupboards. It has a nice large cup warming tray. Placing the Barista in a corner is ideal, especially when located near the sink.

The Barista comes well packed, in a tough box and with comprehensive documentation covering all aspects of operation, routine maintenance and production of espresso based drinks. A valuable addition to the Italian manufacturer's written User guide that comes free with the Barista.



Very well packed inner box, protected by double packing in an air-cell filled outer by Bella Barista

Unusually the manufacturers' user guide is actually quite good, although all the procedures may not have been tried by the manufacturer, as one didn't work as described on my machine!

Even if you are completely new to coffee making and this type of machine, you will have no problem making all those great coffee drinks in a very short time The Barista is easy to keep clean, a quick wipe with a damp cloth and a buff with a micro fibre cloth is all that's required to keep it looking great. The more complex tasks such as backflushing and descaling are easy to do and the supplied Bella Barista user guide explains how to do them in detail.

The Barista, positioned in the corner of my kitchen

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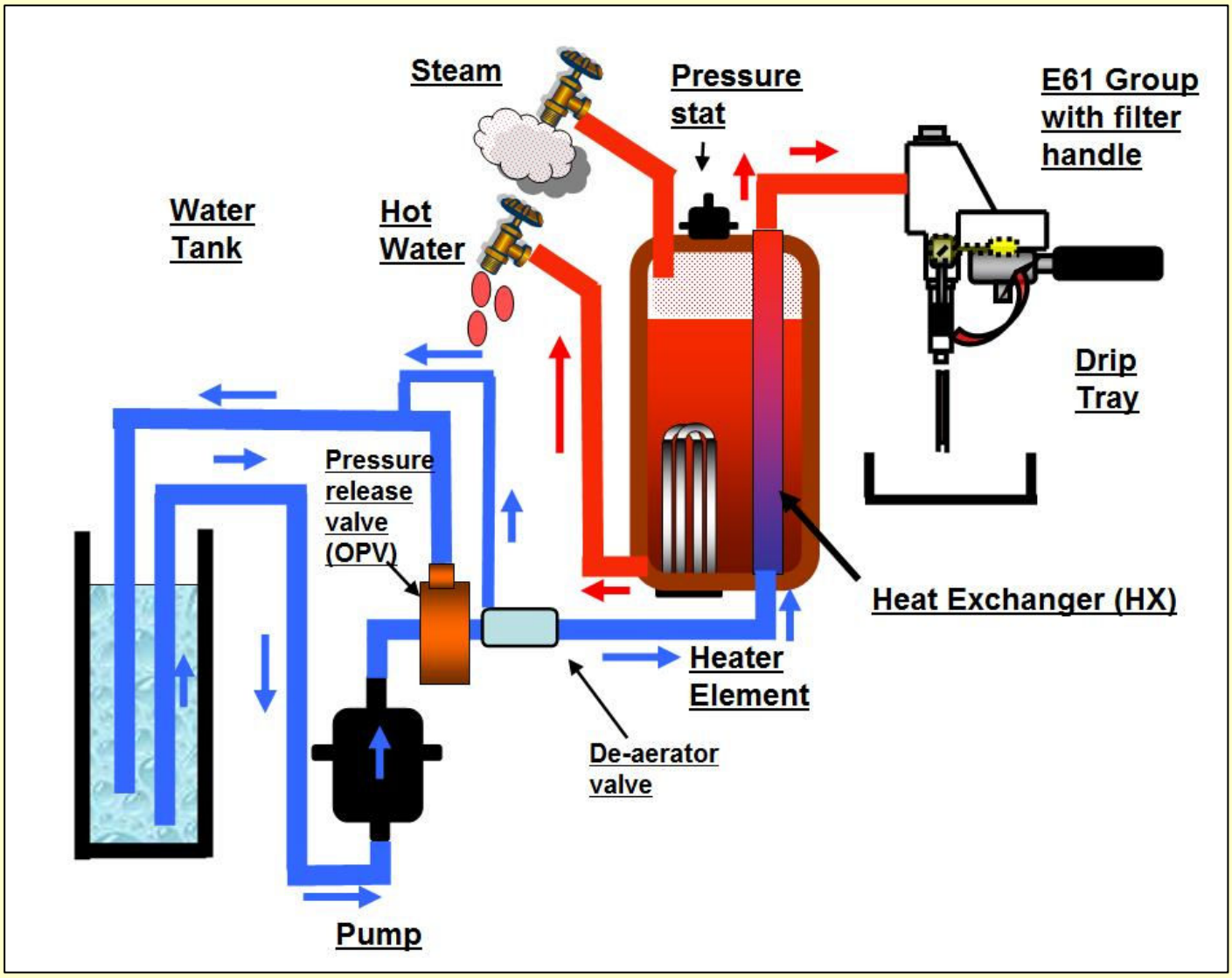
How it works



The diagram shows a simplified diagram of the Barista. The pump keeps the boiler about 60% filled with water that is heated and kept at a pressure of 1.2 bar (about 22 psi). The temperature of this water is above boiling point and has an area of steam above (similar to a pressure cooker).

Steam

The pipe for the steam wand is at the top of the boiler (in the steam area) as the steam tap is opened, steam is forced through the steam pipe and as the pressure drops more of the water instantly flashes to steam, giving a continuous supply.

Hot Water

The pipe for the hot water tap is submerged below the waterline in the boiler. As the hot water tap is opened, steam pressure forces the hot water from the boiler through the pipe and out of the hot water outlet.

Coffee Brew Water

Coffee brew water for the group does not actually come from the water in the boiler, but is pumped directly from the tank through a "heat exchanger" (essentially, a big copper tube) that passes through the hot boiler. As the cold water from the water tank passes through this tube it is heated to the correct temperature for brewing coffee.

Lifting the lever starts the pumping of brew water, lowering the lever stops the pump and additionally releases the pressure (all 140 psi of it) from the group, so you can remove the filter handle safely, (the excess water goes into the drip tray when pressure is released)

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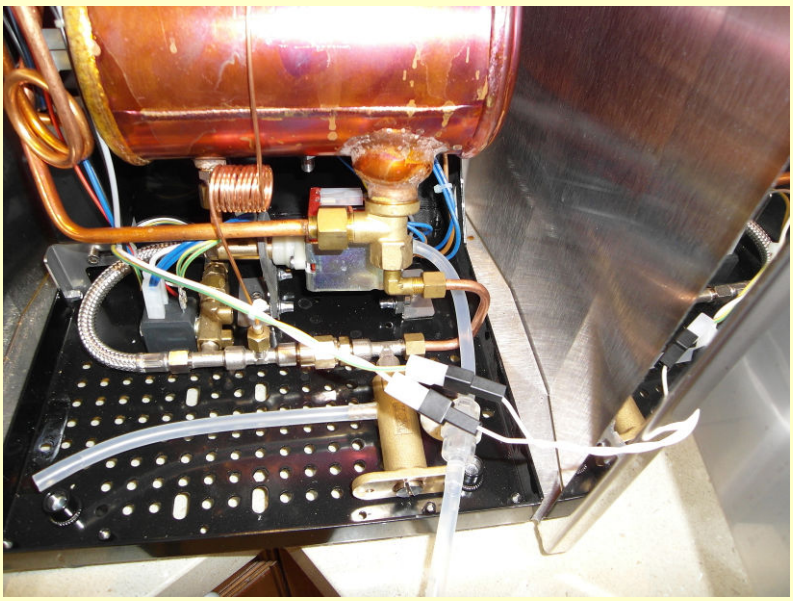
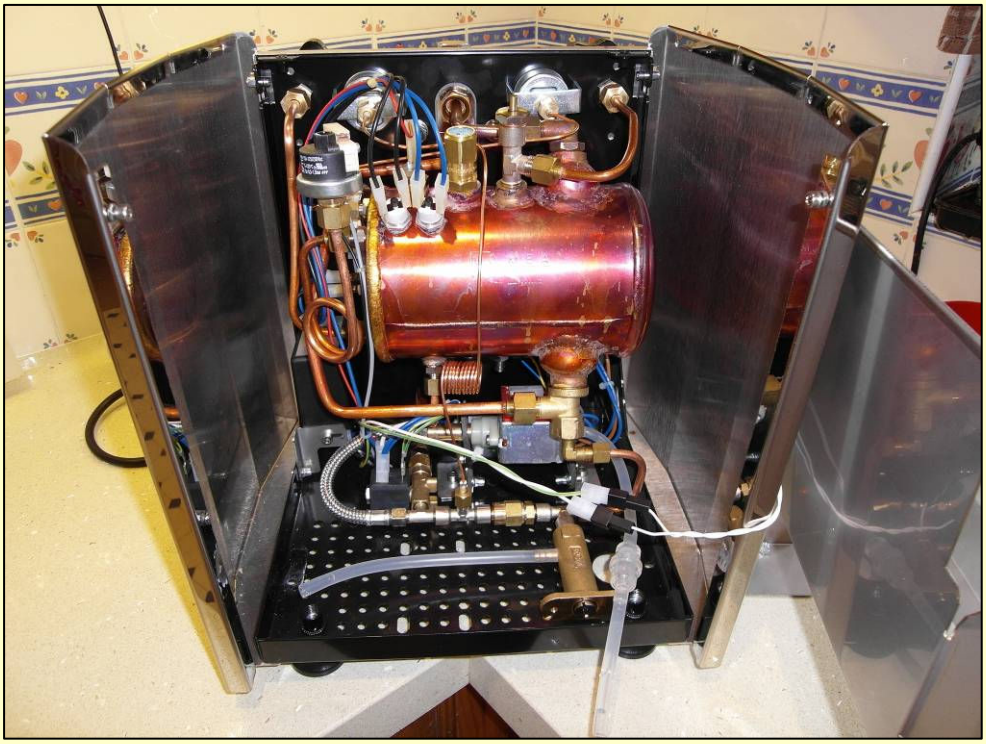
Inside the Barista

A close inspection of the Barista shows a machine that has all the usual refinements internally that one would expect. Internal build quality is good, with good attention to detail. Components are reasonably well positioned and neatly assembled. Some internal shots:



Removing the top plate (4 Allen bolts), gives easy access (within 30 seconds) to many components including the pressurestat

Brew water path, with, solenoid valve, OPV assembly, and vibe pump all easy to reach



Access to the interior is good with only the top plate, case back and water tank holder removed (this takes less than 5 minutes).

Tip: just loosen the Allen bolts for the back slightly; you don't need to remove them.

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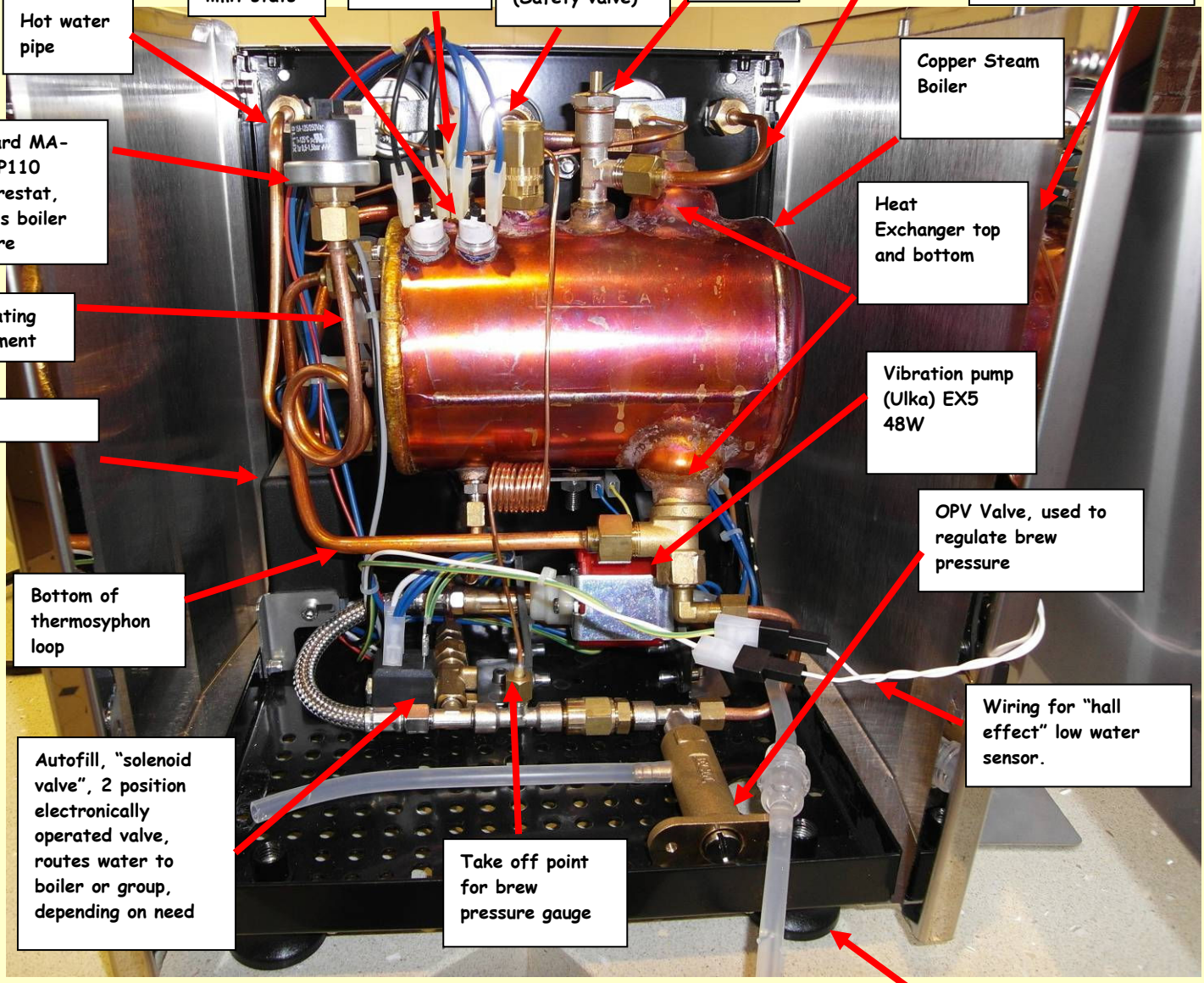
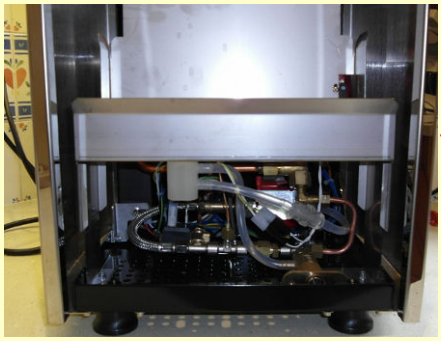
A detailed Tour


2 Resettable limit stats
Autofill, "level" probe just behind limit stats
Pressure relief valve (Safety valve)
Vacuum breaker
Steam pipe
Cold water tank holder removed and placed to one side
Hot water pipe
Copper Steam Boiler
Standard MA-TER XP110 Pressurestat, controls boiler pressure
Heat Exchanger top and bottom
Heating element
Vibration pump (Ulka) EX5 48W
OPV Valve, used to regulate brew pressure
Bottom of thermosyphon loop
Wiring for "hall effect" low water sensor.
Autofill, "solenoid valve", 2 position electronically operated valve, routes water to boiler or group, depending on need
Take off point for brew pressure gauge
Height adjustable feet (ABS plastic)



View of inside with water tank platform in place

The picture above identifies the major components of the machine, once the case is removed accessibility for maintenance is good without full case removal, removal/refitting of the case is fairly easy

This machine would be fairly simple to work on for most of the major components requiring replacement over time.

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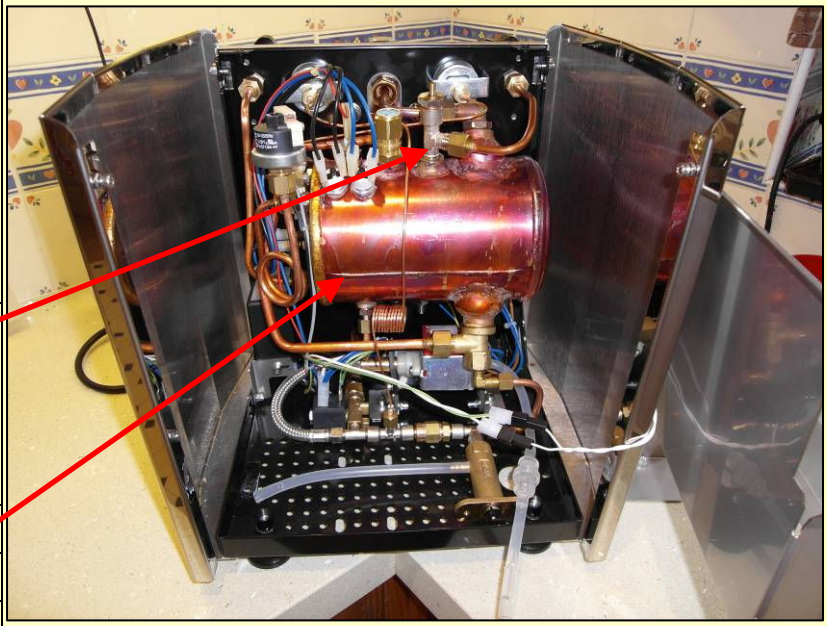
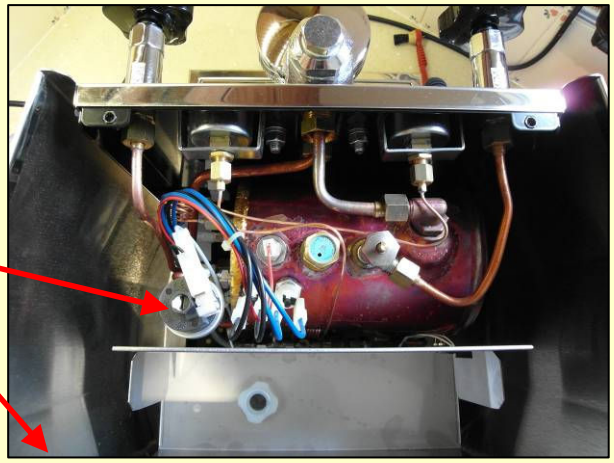
Key Features

- **Ball Joint steam and water arms**
- **Nice quality internal water tank**
- **Low water sensor – magnetic float (hall effect)**
- **"non compression" commercial type steam & water valves**
- **Brew & Boiler Pressure Gauges**
- **Adjustable pressure stat MATER XP110.**
- **Height adjustable feet**
- **Twin limit stats (extra protection)**
- **Long life Incolloy 800 heating element**
- **2 portafilter holders and 2 filter baskets as standard (single basket is a nice "deep single".**
- **Large 2.1 litre boiler**

Item/Description	Picture	Comments
Polished Steel external case with plenty of room for internal components to stay cool. The case is a good fit; access to some components is quickly achieved from the top via removal of 4 allen bolts. Most maintenance can be done by only removing the top and back the case. Significant maintenance task (e.g. heating element replacement) requires case removal, which is only moderately time consuming.		
Vacuum Breaker mounted on an extension tube, something I have said should be done for some time. This should give a lot less leakage problems, than those mounted directly on the boiler, as less splash on seals		
Nice quality copper boiler with good brazing		
High quality internal components		
Good routing of internal cables and pipes, avoiding hot spots and areas of vibration scuffing. All components quite accessible. This makes servicing easy		
Very accessible pressurestat that is not too sensitive to adjust. This makes pressure adjustment extremely easy and can be adjusted without removing the entire case, just the water tank carrier needs to be removed (4 allen bolts) **I would have liked to see a specific hole added in the top plate, above the pressurestat, to enable adjustment without having to remove the water tank, empty, refill and replace it again.**		

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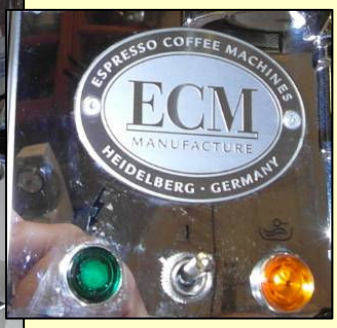
A nice quality metal badge. For a change a machine with a badge that actually is in keeping with it's value.

It is even riveted in place, which means it won't fall off….something that occasionally happens on some espresso machines with constant exposure to heat and steam.

Readers of past reviews will know that I am not a fan of cheap badges, especially when stuck on, or even worse, not level.

The badge also extends to a similar quality, but much larger badge on the back of the machine. Probably unnecessary for a consumer machine I suppose….BUT, it shows attention to detail and pride the manufacturer has in the machine.



Nice quality and very large cold water tank, accessed by removing the cup warmer tray. It holds just over 3 litres and simply slides in and out of the Barista for easy cleaning. Refilling can be done with the tank in or out of the machine. It has a wide mouth so it's easy to refill without spills.

Nice large cup warming tray. You can get plenty of cups on there, definitely no lack of space.

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The Barista is heavy, because the internal frame is rigid and constructed with a quality (thick) steel

The feet are height adjustable and made of ABS plastic. This makes the machine very difficult to slide around and you will want to slide it around to refill it if it is under cupboards.

I strongly recommend the use of felt bottomed (or Teflon faced) castor cups for a few pounds, to make it easy to move and protect your worktop. It is difficult to attach the felt directly to the feet because they are "hollowed out" underneath

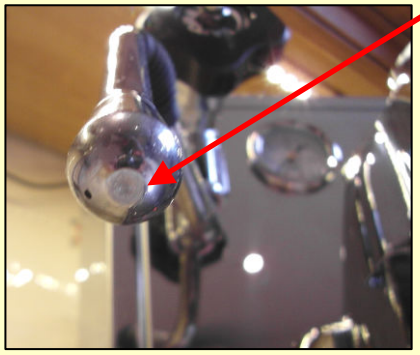
The drip tray is of reasonable size and holds around 1000ml before it needs emptying (it can hold more but you will spill liquid whilst trying to empty it).

It is all steel and nice quality.

The Barista is a moderate steamer, with nice ball joint steam and water wands. To microfoam smaller quantities of milk, to the texture I like (aprox 100-120ml) I would also buy a single hole steam tip with this machine for foaming small quantities of milk easily and would maintain pressure a little better.

Professional quality no compression steam valve and ball joint "no burn" steam wand, with attractive large tactile knobs. The steam wand was long enough to reach to the bottom of all my small and medium pitchers.

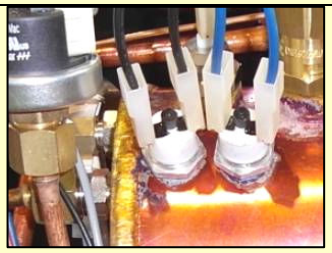
"non compression" valves *- use a spring and seal to seat. Opening the valve typically "pushes" the sprung seal open, closing simply allows the spring to close the valve, there is no "**compression"** of a washer as in some taps. Commonly found in the commercial environment, because the seals connot be damaged by "ham-fisted" operators closing them too tightly.*



They used to have a 5 hole steam tip, it was fantastic. Sadly they have now changed to a 2 hole tip. Sure it works, but it's not as good as the 5 hole tip. It was so good I nearly pinched it to use on my own machine!

ECM please start fitting the 5 hole tip again, esp|ecially if you change to 1400W heating elements!

Two resettable limit stats is unusual, I checked with ECM who confirmed this was to offer extra protection, due to the potential for polarity reversal when using shuko plugs in some european countries (not the UK), thus protecting the machine even when live and neutral is reversed….**nice thinking!**



ECM might consider an extra limit stat on the end of the thermostat (this could give boil dry protection e.g. when water level is below the heating element.

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Fairly good factory manual that comes with the machine. I only had a quick glance, but it seems to cover most of the basics. The Bella Barista userguide will extend and suplement the information here.

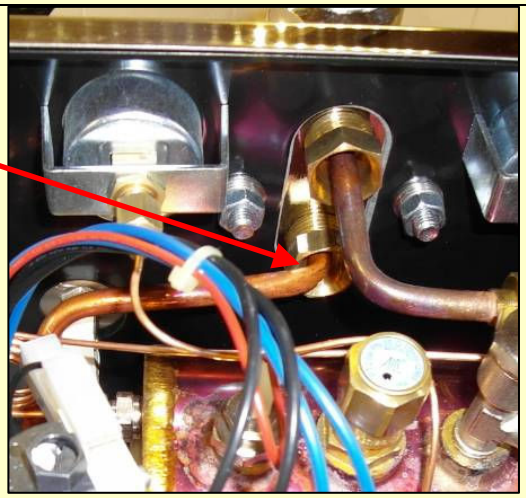
Portafilters are heavy, nice quality and properly finished (e.g. chrome button in the end. Other items are; blind filter (for backflushing), usual plastic tamper…which of course should be changed for a proper/ "real" one as soon as possible. Plastic coffee scoop , you should never use it though, because you need to be grinding your coffee fresh, not scooping pre-ground out of a bag!

Interestingly the Barista portafilers came with a decent "large" single basket (plus a standard double). I much prefer this size basket as it's shape and amount of coffee helps greatly in getting a good and well balanced single shot. On the right is the ECM basket and on the left is my own Izzo single, which is pretty much identical in size and dimensions.

For all my machine reviews I always use my own naked portafilter and basket!

The machine switches off the heating element when low on water, the boiler then goes cold and the pump will not run. However, there is NO low water alarm and the only visible indication that the machine is off (apart from the slowly decending boiler pressure gauge), is the orange(water OK) lamp switches off. The green power light stays on,so it is not apparent from a distance, or from a casual glance that the machine has switched off the heating element. I really think that in a machine of this value, an audible alarm should be added. It can be very irritating to go to make a coffee only to find that the machine switched off the heating element an hour ago and then have to wait 20 minutes or more for it to warm up.

*Note to ECM: You need to be careful with the group pipes when bending them, this one was **just** OK.*



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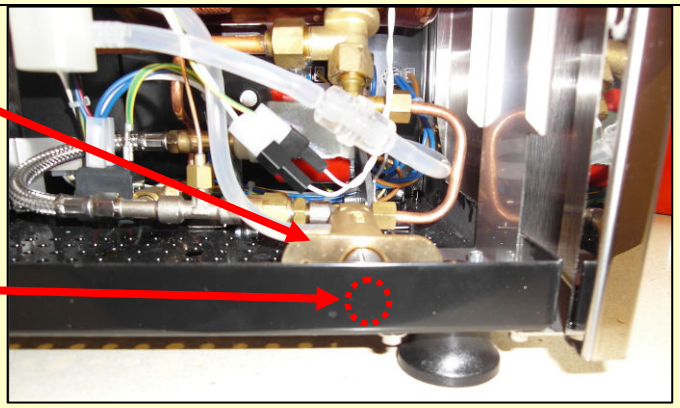
The 3 flats on each of the side panels give the machine a really nice look, much better than straight sides.

After so much good, a bit of a schoolboy error. The expansion valve/OPV assembly is placed such that the pressure cannot easily be adjusted, because the steel subframe is in the way.

It would be simple to have a small 8mm hole within the subframe and a similar one laser-cut into the rear panel. This would allow brew pressure adjustment without removing the case.



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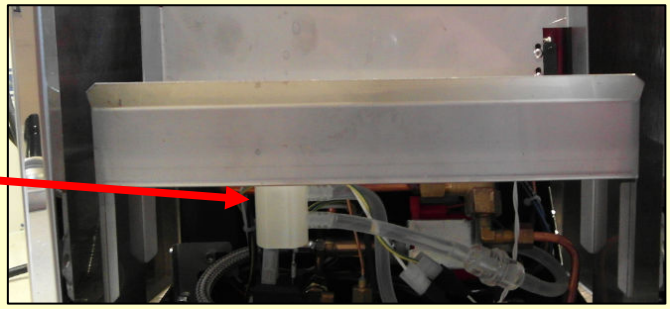
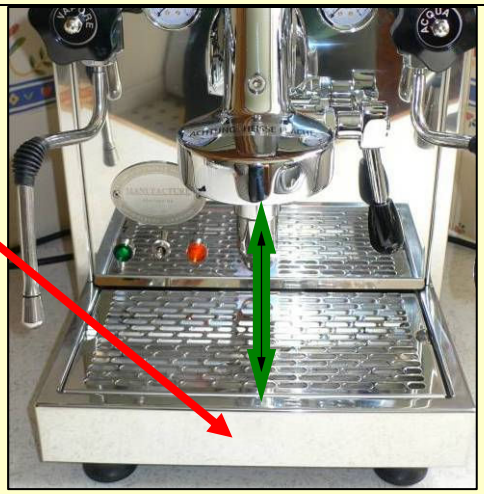
Sadly ECM have moved from a Microswitch to magnetic ("hall effect") low water sensing using a float in the tank. This may make it harder to implement a low water audible alarm. **At the moment the machine simply switches off the power to the orange front lamp and to the heating element…..irritating if you don't notice, or a boiler autofill empties the tank!**

Electronic water sensing (better than a float)…is directly supported by the Gicar RL30 unit and would also allow an audible water alarm (because this alarm is built into the RL30 Gicar. I know this will work because I have converted my own MK1 duetto to electronic low water detection with audible alarm. The detection pins could easily be incorporated in the smaller resevoir below the water tank. In addition, the main tank would be cheaper to make and have no float and slide mechanism inside. Less to clean and less to go wrong.



The rating plate, placed on frame of the machine behind the drip tray

The gap between the group and the drip tray was a nice large 146mm, that little bit of extra height really comes in quite handy



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Using the Barista – simple and easy to use!

The Barista runs hot, but not too hot and requires a smaller cooling flush than other HX machines, 3 oz max. There is always a compromise between steam pressure and production of brew water at the right temperature for espresso. Pressure in the boiler is directly related to the temperature, a higher pressure gives higher temperatures. Because of the way HX machines work most require a cooling flush prior to drawing the first in a series of espressos, the Barista in common with other machines of this type also requires this "cooling flush", **the Barista required a smaller than usual cooling flush, this gives a little more headroom to raise steam pressure (if desired)** without adversely affecting brew temperature.

Pressure Settings

You can alter the pressure/temperature of the boiler if required, although I found the factory settings to be OK at around 1.25 bar, if it was my personal machine I would be tempted to try increasing this 1.3 or 1.35 bar.

Espresso

As long as a cooling flush is performed, the Barista makes consistently good espressos and easily maintains the temperature during the pour. Domestic volumes of espresso one after another will be absolutely no problem with this machine. The brew pressure at the group when tested was set to 10 bar. This could easily be adjusted lower (9.5 bar) as the good quality OPV is quite adjustable, but I wouldn't bother.

Hot Water

It's nice to have really hot water on tap, recovery time after drawing hot water for an Americano is fast. Although I recommend a kettle for regular hot water production, rather than an expensive coffee machine. It is a better option in areas where lime scale is a problem and saves having to descale your machine so often.

Brew pressure can easily be adjusted as the Barista has good quality OPV

The E61 group

The E61 group is an industry standard (as are many of the components in the machine), so parts such as, pumps, gaskets, shower screens, filter holders, filter holder handles etc. are all a standard size and readily available from multiple suppliers. This makes the pricing of these spares highly competitive. **You may have read about ECMs own redesign of the E61 brewing group, just so there is no confusion, the Barista has a standard Generic E61 group.**

Steam Production

The Barista has good steam performance and you will not run out of steam. To steam that 500ml of milk will not take long. It takes a little while to get used to steaming, especially with smaller quantities of milk. **The ECM machines used to come with a fabulous 5 hole tip (5 small holes). They now come with the same 2 hole tip most manufacturers use. Although it's OK, the old 5 hole tip was so much better!**

I also prefer the standard "burn" type steam and water wands. I don't like the "no burn" steam wands, the insert tube seems to restrict steam flow and they don't work as well as the standard type of wand. It's quite easy to get alternative steam tips if desired for the standard wands.

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Final Thoughts – so what's the bottom line!

The Barista is a well built German manufactured machine using high quality components. For Bella Baristas entry level ECM machine the quality is exceptional. I have been quite tough in the review, because even though it's an entry level machine, it's still a lot of money to spend and expectations should be high. I also want ECM to read the review and take action on the few issues I found, mainly because they still have not dealt with them from earlier reviews some years ago. In fairness some other issues I raised have been dealt with, but it seems a shame to "spoil the ship for a hapeth of tar". The 80/20 rule does not apply here and for very little effort and cost they could make this the near perfect entry level HX!

The Barista definitely more than holds its own against other similar machines. At this level all the machines make great coffee, and the choice is often down whether you simply "like the look of it". **I think the ECM Barista represents exceptional value, even against machines costing up to £300 more. It could be a mistake buying a more expensive HX machine, thinking that because it costs more, it must be better. The Barista is good…..very good**

Anything you would change?

It's heavy at 22kg, but not too large. I also liked the fact that the group was slightly higher (approx 146mm) above the drip tray than normal. As a reviewer, with my 20/20 hindsight, there were a few things.

- *Audible Low water alarm (already built in to Gicar RL30)*
- *Use existing orange light to show heater on/off operation*
- *Use metal and not plastic feet*
- *Change to electronic low water level detection (a direct function of a Gicar RL30)*
- *Put some silicon/rubber dot's around the cup tray area, so that it fits firmly and will not rattle at all. This will give an even quieter machine.*
- *Bring back the 5 hole steam tip, or simply add it to the machines accessories as an extra free steam tip in addition to the 2 hole tip.*
- *Have a hole in the frame and laser cut in the rear panel to allow brew pressure adjustment without case removal*
- *Increase power of heating element to 1400W*

Conclusions

The above minor items do little to detract from day to day operation. With very little effort ECM could make the Barista near perfect in its class. The vibration pump is very quiet and t**he large 2.1 l boiler of the Barista is definitely benefits performance**. Overall quality is excellent and equals or exceeds the quality level of higher end (more expensive) HX machines. Sensitive electronics are at the bottom of the case and subject to minimum heat, which should make the machine **much** more reliable. The Barista is a great machine (probably best in class), with nice styling. The look of a machine is a very personal thing, but for technical merit and build quality, **I rate the Barista very highly over many other HX machines that cost significantly more.**

It gets a rare, but well deserved star buy rating from me!

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ECM BARISTA – A CLOSER LOOK

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ECM Barista Specifications	
Height-Width - Depth:	**w x d x h / 330 mm x 425 mm x 400 mm (add 150mm to depth with portafilter fitted)**
Weight:	22 kg approx
Voltage & Power (approx):	230 V-50Hz, nominal 1200W max
Temperature control	Adjustable MATER XP110 Mechanical Pressurestat, plus dual limit stats for added protection.
Water Tank :	3.1 litres, removable with low water sensor (magnetic float)
Single Boiler HX system:	2.1 litre Steam/HW boiler
Pump Type:	**Vibration (Ulka EX5 48W)**
Group Head:	1 (E61 type), (manual lever action)
Supplied Accessories:	2 Filer Handles (double & Single Spout), Baskets for 1 or 2 cups, Diameter 58 mm, blank back flush basket, plastic tamper, group head brush and coffee scoop (plastic).
Construction/Finish:	Heavy Gauge Polished Stainless Steel (“octagonal style”) case and internal steel frame
Water/Steam	Hot water on demand. Steam on demand (ball joint mounted, no burn wands). Non compression valves.
Boiler & heating element:	Copper with brass end steam/HW boiler, **Incolloy 800 long life heating element**
2 Manometer Gauges:	Measures Boiler & Brew pressure
Brew Pressure:	Adjustable via expansion valve (or OPV)
Convenience Features	Removable drip tray, cup warmer..removable for water refill, adjustable pressurestat, height adjustable feet. Mains on light, water full light, single on/off metal pin switch.

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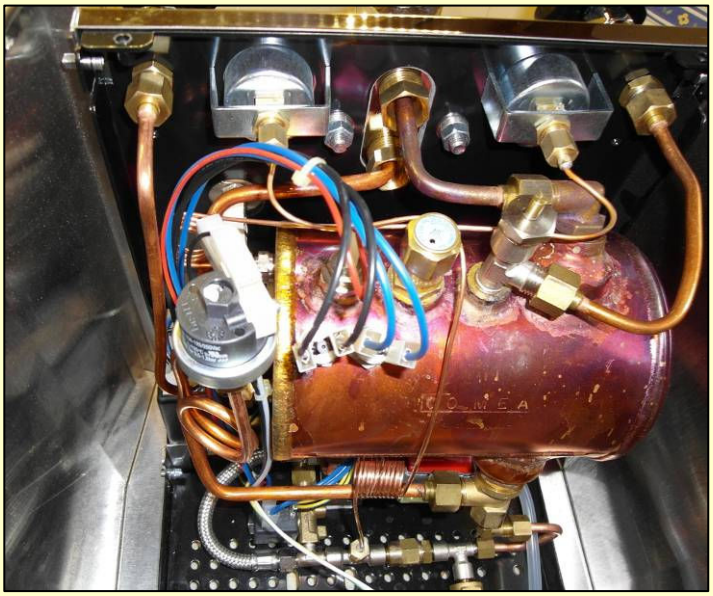
Gallery – A few pictures of the Barista

The beautiful lever operated E61 group, just waiting to make that espresso or latte!



Very good access for maintenance, great build quality

2 high quality group handles, with single, double and blind baskets

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